RETROSTERNAL ACCESSORY THYROID TUMOR.

REPORT OF A CASE REQUIRING REMOVAL, TERMINATING FATALLY.

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THE anatomical range in which it is possible to encounter an accessory thyroid gland is large, extending from the base of the tongue to the arch of the aorta in a vertical direction, with the great vessels of the neck forming the lateral boundaries; posteriorly the area is limited by the spinal column, while in front the glands may lie subcutaneously. They have also been found within the trachea and larynx.

In size the accessory glands may vary from a tiny nodule to a structure as large or larger than the typical thyroid. The shape usually depends on the yielding of the surrounding tissues during the development of the gland.

Accessory thyroids have been divided anatomically into *true* and *false*. The latter are merely outbuddings of the parent typical thyroid and remain attached to it by a pedicle of true thyroid tissue. The variety designated as *true* accessory thyroids is further subdivided into *attached* and *free*. The *free* are, as the name implies, perfectly distinct islands of thyroid tissue as opposed to the *attached*, where a strand of connective tissue binds the accessory structure to the typical thyroid body.

Accessory thyroids, both *true* and *false*, may be multiple or single. When present, accessory thyroids are subject to about the same pathological changes and in about the same proportion as the typical thyroid body,—a parenchymatous enlargement with colloid degeneration being the most common. Where the accessory thyroids are situated superficially and the structure is sufficiently large to admit of palpation, their presence may be appreciated, although, unless pathological changes occur, there are, as a rule, no symptoms. If

the bodies be placed behind the sternum or masked by the larger structures of the neck, both the subject and the surgeon are probably in ignorance of the presence of any abnormal structure. Enlargement with pressure on the surrounding structures are usually the first signs to arouse our suspicions. The pressure symptoms vary, of course, with the structures pressed upon, and these depend on the site occupied by the tumor.

Concluding the above brief review of the subject, the writer offers the history of the following case that came under his observation.

Mrs. A., aged forty-seven years, mother of one child, presented herself to the writer on December 1, 1902. She had a globular cystic tumor about one inch in diameter to the right, but close to the median line of the neck, overlying the thyroid cartilage. Unquestionably, a cyst of the right lobe of the typical thyroid gland. The tumor had been present for nineteen years, although at first quite small; in the last two or three years there had been a decided increase in size, and lately there had been some difficulty in breathing, which the patient properly attributed to pressure on the trachea. There was no difficulty in swallowing or evidence of nerve pressure. Since girlhood the patient had been subject to bronchitis, not a winter passing in the last thirty years without a severe attack. In other respects her history and examination were negative. Operation was decided upon and performed the following day, December 2, 1902.

Under general anæsthesia, a median two-inch vertical incision was made, with parting of the muscles down to the thyroid. The substance of the gland was divided over the eminence of the tumor and the cyst pealed out of the gland tissue. Instead of finding a simple spherical mass, the globular head of the cyst had a tail or backward prolongation about a half-inch in diameter, extending along the right side of the trachea and œsophagus until only a thin layer of gland substance lay between the termination of the cyst and the muscles covering the front of the cervical vertebræ. Two small cysts about a quarter of an inch in diameter were shelled out from the left lobe of the gland. All bleeding points were then tied, the ligatures being left long; the latter

were then tied tight to one another, thus largely diminishing the size of the cavity without running the risk of renewed hæmorrhage from needle puncture in attempting to diminish the cavity with sutures. A straight tract about one-quarter of an inch in diameter was thus left extending from the partially sutured skin nearly to the vertebral column; into this a rubber-covered gauze drain was placed. It was noted at the time of operation that the trachea at its upper end had been slightly dented on its right side by the cyst. Examination of all three cysts showed the usual colloid material.

The second day after operation the patient had the symptoms of a severe attack of bronchitis, with much coughing and secretion. The wound looked healthy; there had been but little hæmorrhage. The drain was removed and a fresh one introduced only part way to the bottom. On the fourth day the wound was again dressed; superficial wound infection evident, and a removal of the drain was followed by some mucopurulent tenacious discharge, not the usual pus of wound infection, but more like pus mixed with colloid material. After thorough cleansing, a rubber tube was placed in the wound cavity, extending to the posterior limit. Rubber-tube drainage was used instead of gauze, as the trachea seemed to have a tendency to constrict the tract, leaving an enlarged portion posteriorly.

At the end of three weeks, the bronchitis having disappeared and the sinus practically free from all active inflammation, the patient went to her home in the country and passed out of the writer's care.

On December 7, 1903, one year later, she again presented herself to the narrator with the following story. After leaving New York, it had been almost impossible to keep the rubber drainage-tube *in situ*. The tube would remain in place but a few hours, and a day or two would elapse before she presented herself to her medical adviser. A reintroduction of the tube was followed by a copious discharge of pus, and the cycle would be repeated. After a time she gave up all treatment. The sinus persisted, the discharge would be very scanty for several days, during which time she would feel ill, then a free escape of pus would occur, and she felt better for a day or two. She had lost much strength and was thin and anæmic.

On examination, the local condition showed a sinus orifice

in median line one inch above episternal notch. Although this was the mouth of the old sinus, it had unquestionably been drawn downward, its change of position and the folds of skin attesting to that fact. At first a probe could be introduced only about a half-inch, but by careful exploration it was possible to map out a sinus extending backward about an inch and a half, and then taking a downward curve for about another inch, terminating in an enlarged cavity. In this cavity lay a hard substance distinctly clicking against the probe. A skiagraph was made with the full expectation of showing a small safety-pin pictured in the cavity. The skiagraph showed nothing, although the control pin placed on the surface of the neck distal from the plate was clearly portrayed. The sinus was gradually dilated with increasing sizes of rubber tubing, until a pair of specially curved forceps could be introduced, and by this means a spicule of bone-like substance about one-quarter of an inch long was withdrawn. At each subsequent examination similar pieces of material were removed, leading to the conclusion that the long-standing suppuration had resulted in a necrosis of a part of the body of a vertebra. An operation of exploration was suggested and accepted.

On March 9, 1904, under general anæsthesia, a three-inch median incision, circumventing the orifice of the sinus, was made, extending from the thyroid cartilage to the sternum. The sinus, previously distended with gauze, was then dissected out and traced backward. To the operator's surprise and mystification, the sinus, which originally had passed to the right of the trachea and œsophagus, now lay to the left of those organs. The sinus terminated in a slightly enlarged cavity lying on the vertebral column at about the level of the sternal notch. Below, and apparently a continuation of the termination of the sinus, lay a discrete mass, at first thought to be enlarged lymphatic ganglia, about three inches long in a vertical direction and about an inch and a half transversely, and the same anteroposteriorly. This mass lay just to the left of the median line, terminating below behind the arch of the aorta; the trachea and œsophagus were to the right, while the left recurrent laryngeal nerve and left common carotid had been markedly displaced to the left.

The entire mass was completely and with comparative ease shelled out from the cellular tissue without any bleeding of moment. The upper part of the wound was retracted to permit

an inspection of the thyroid body and the field of the former operation. The isthmus and lower margins of both lobes of the thyroid were seen and proved to be in no way connected with the mass removed. The site of the original cyst was a small scar.

The wound was then closed except at the lower part, where a large rubber-covered wick was placed to the bottom of the cavity in the cellular tissue behind the arch of the aorta. The pulsations of the aorta were most markedly transmitted to the packing, the external end swaying with each beat. The usual sterile dressings finished the operation.

On gross section the mass was clearly pure thyroid tissue with many colloid cysts and numerous calcareous deposits, the sinus evidently terminating in one of the cysts that had ruptured.

Microscopically the report confirmed the gross examination. The microscopic report with the anatomical observations made during the operation place the tumor in the class of *true* retrosternal accessory thyroids. Of these tumors the writer finds only three reported (Wagner (von Bergmann)) that have undergone the pathological changes noted above, *i.e.*, colloid degeneration with calcareous deposits.

For three days after the operation the patient gave every hope of a prompt recovery. The shock was slight; there was no impairment of voice or deglutition. Temperature not above 100° F. The wound was aseptic, and the large cavity diminishing rapidly by the gradual return of the structures to their normal position.

On the fourth day, however, a lobar pneumonia of the right middle lobe developed, rapidly spread to the adjacent lobes, involving the entire right lung, and eight days after operation the patient died.

The writer offers this report for publication because he believes that diseased accessory thyroids demanding surgical interference are not common, and furthermore the area involved in the surgical interference in this case is one not often invaded. At the primary operation the tract of the cyst passed unquestionably to the right of the trachea and œsophagus, at the second operation the sinus lay equally clearly to the left of those structures. The writer's explanation and belief as to

this fact is that, during the slow healing at the deeper parts of the original sinus, a cyst of the accessory thyroid increased in size, passed across the trachea from the left side, and finally ruptured into the sinus. Thus, while the superficial part of the old sinus served as an outlet for both tracts, the deeper parts of the original tract healed, and the more recent channel remained open. So large an exposure of the mediastinum must predispose to pneumonia, yet, had the patient not had so marked a tendency to pulmonic disease, it would not have been unreasonable to have expected a successful outcome.